

# GLOSSARY

**305(b) Water Quality Assessment** a report prepared in compliance with both section 305 of the federal Clean Water Act and Virginia's Water Quality Monitoring, Information and Restoration Act

**303(d) TMDL Priority List** a listing of Virginia's impaired or threatened waters that is developed in compliance with section 303(d) of the federal Clean Water Act, Virginia's Water Quality Monitoring, Information and Restoration Act, and the State/EPA 106 agreement

**adsorption** process by which a solute is attracted to a solid surface—used in stormwater management BMPs to enhance the removal of soluble pollutants

**ambient** pertaining to the current environmental condition; ambient monitoring evaluates water quality periodically at fixed locations; data collected over long periods of time help determine the status and trends of water quality of a particular body of water

**aquatic bench** a 10-15 foot wide bench around the inside perimeter of a permanent pool that ranges in depth from 0-12 inches—vegetated with emergent plants, it augments pollutant removal, provides habitats, protects the shoreline from the effects of water level fluctuations, and enhances safety

**aquifer** water-bearing portion of a geologic formation that transmits water

**assessment** an evaluation of watersheds based on the presence or lack thereof of specific nonpoint source indicators

**atmospheric deposition** process by which atmospheric pollutants reach the land surface either as dry

deposition or as dissolved or particulate matter contained in precipitation

**average land cover condition** percentage of impervious cover considered to generate an equivalent amount of phosphorus as the total combined land uses within the Chesapeake Bay watershed at the time of the CBA adoption, assumed to be 16 percent.

**basin management plan** river basin plans developed under federal and/or state initiatives that include comprehensive, integrated activities to control NPS pollution to identified impaired stream segments, and to maintain water quality of unimpaired segments of Virginia's waterways—see *chapter V, Watershed Prioritization, for definitions of specific programs and activities*

**beneficial use** use of a [water] resource that includes, but is not limited to, domestic (including public water supply), agricultural, commercial, industrial, water-based recreational uses, and the propagation and growth of aquatic life

**benthic** pertains to the bottom, or bed, of a body of water

**best management practice (BMP)** structural or nonstructural practices or combination of practices that are determined to be the most effective and practical (including technological, economic, and institutional considerations) means of controlling point and nonpoint pollutant levels compatible with environmental quality goals

**biological water quality sampling** the use of biological or ecological characteristics, such as the growth, survival and reproduction of an aquatic species, the

diversity, structure and functioning of an aquatic community, and characterizations of aquatic habitat, to measure the "effects" of environmental impairment

**bioretention basin** water quality BMP engineered to filter the water quality volume through an engineered planting bed, consisting of a vegetated surface layer (vegetation, mulch, round cover), planting soil, and sand bed (optional), and into the in-situ material—also called rain gardens

**bioretention filter** bioretention basin with the addition of a sand layer and collector pipe system beneath the planting bed

**catch basin** an inlet chamber usually built at the curb line of a street or low area, for collection of surface runoff and admission into a sewer or subdrain—commonly has a sediment sump at its base, below the sewer or subdrain discharge elevation, designed to retain solids below the point of overflow

**channel** the main flow of a natural or manmade waterway

**channel stabilization** the introduction of natural or manmade materials placed within a channel so as to prevent or minimize the erosion of the channel bed and/or banks

**channelization** the straightening of a stream, primarily a result of human activity

**chemical water quality monitoring** the direct, quantitative measurement of physical parameters, of the quantity or concentration of specific chemical elements or compounds, or of chemical reaction rates in aquatic substrates; the medium evaluated may be water, sediment or biological tissues; the concept of chemical monitoring is based upon measures of the possible "causes" of environmental impairment

**combined sewer overflow (CSO)** sewer systems that combine sanitary waste and stormwater in instances of heavy rains, usually untreated; cities with older systems often have CSOs

**conduit** any channel intended for the conveyance of water, whether open or closed

**confined animal feeding operation (CAFO)** a lot or facility, together with any associated treatment works, where (1) animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period; and (2) crops, vegetation, forage growth or post-harvest residues are not sustained over any portion of the operation of the lot or facility (pertains to both operations that require a permit and non-permitted operations)

**constructed stormwater wetlands** areas intentionally designed and created to emulate the water quality improvement function of wetlands for the primary purpose of removing pollutants from stormwater

**culvert** man-made construction that diverts the natural flow of water

**detention** temporary impoundment or holding of stormwater runoff

**detention basin** a stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic outlet structure to a downstream conveyance system

**dissolved oxygen (DO)** oxygen that has dissolved in water and is available for aquatic organisms (fish, invertebrates, plants and aerobic bacteria) for respiration

**dredge** to remove sediments from a stream bed to deepen or widen the channel

**effluent** wastewater discharge

**environmental benefit** an improvement in water quality and/or the structure and function of living resources

**eutrophication** the process of over-enrichment of water bodies by nutrients, often typified by the presence of algal blooms

**existing construction** (with failing sewage disposal systems) an existing structure where the sewage disposal system serving the structure has failed or is currently in violation of state law or regulations and requires correction

**fecal typing** assessment technique (e.g. DNA finger-

printing) used to isolate human and non-human sources of fecal coliform contamination in surface and ground water

**first flush** the first portion of runoff, usually defined as a depth in inches, considered to contain the highest pollutant concentration resulting from a rainfall event

**floodplain** for a given flood event, the area of land adjoining a continuous water course that has been covered temporarily by water

**GIS** Geographic Information System—a method of overlaying spatial land and land use data of different kinds. The data are referenced to a set of geographical coordinates and encoded in a computer software system. GIS is used by many localities to map utilities and sewer lines and to delineate zoning areas.

**grade** the slope of a specific surface of interest, such as a road, channel bed or bank, top of embankment, bottom of excavation, or natural ground—commonly measured in per cent (unit of measurement per one hundred units) or a ratio of horizontal to vertical distance

**grassed swale** an earthen conveyance system that is broad and shallow with check dams and vegetated with erosion resistant and flood tolerant grasses, engineered to remove pollutants from stormwater runoff by filtration through grass and infiltration into the soil

**ground water** any water, except capillary moisture, beneath the land surface in the zone of saturation or beneath the bed of any stream, lake, reservoir or other body of surface water within the boundaries of this commonwealth, whatever may be the subsurface geologic structure in which such water stands, flows, percolates or otherwise occurs

**habitat assessment** the evaluation of the physical, biological, and chemical environment and evaluation of its impact on biodiversity and ecosystem function and integrity

**harvesting** (forestry) all planning & design, road, log deck and skid trail construction, and maintenance during active logging to remove wood products from the forest to a processing plant

**high priority watershed** a watershed assigned to the

category of nominal scaling associated with the greatest impacts to water quality for the criteria being ranked (i.e., total agriculture high priority watershed). When a criteria is not explicitly referenced with this term, the highest rank of the overall (total) NPS pollution assignment is implied

**impaired water** water that is not meeting the state water quality standard; water with fish or shellfish harvesting prohibition by the Virginia Department of Health (VDH); and water where biological monitoring indicates moderate or severe impairment

**impervious cover** a surface composed of any material that significantly impedes or prevents natural infiltration of water into soil—includes (but not limited to) roofs, buildings, streets, parking areas, and any concrete, asphalt, or compacted gravel surface

**impoundment** an artificial collection or storage of water, as a reservoir, pit, dugout, sump, etc.

**infiltration facility** a stormwater management facility that temporarily impounds runoff and discharges it via infiltration through the surrounding soil—may be equipped with an outlet structure to discharge impounded runoff, such discharge is normally reserved for overflow and other emergency conditions. (infiltration basin, infiltration trench, infiltration dry well, and porous pavement are considered infiltration facilities)

**intensity** depth of rainfall divided by duration

**karst topography** regions that are characterized by formations underlain by carbonate rock typified by the presence of limestone caverns and sinkholes

**land development** a manmade change to, or construction on, the land surface that changes its runoff characteristics

**land use** any activities that takes place on land, such as construction, farming, or tree removal

**land conversion** final harvest of the forest with subsequent land-use conversion to agriculture, residential or commercial development, mining or highway construction

**local political subdivision or locality** a city, town,

county, district, association, or other public body created by or under state law

**load or loading** the introduction of an amount of matter or thermal energy into a receiving water; may be either man-caused (pollutant loading) or natural (background loading)

**maintenance (forestry)** maintenance includes upkeep of permanent road and trail systems, prescribed burning for fuel reduction or habitat selection, and use of herbicides

**marsh** a wet area, periodically inundated with standing or slow moving water, that has grassy or herbaceous vegetation and often little peat accumulation; the water may be salt, brackish or fresh

**monitoring** the physical, chemical and biological analysis of water quality parameters as well as predictive measures of assessing nonpoint source water quality impacts

**municipal stormwater permit** NPDES permit issued to municipalities to regulate discharges from municipal separate storm sewers for compliance with EPA regulations and specify stormwater control strategies

**new construction** construction of a building for which a building permit is required

**nonpoint source (NPS) pollution** diffused pollutants that are washed off the land (runoff) during the natural process of rainwater flowing across the land to rivers, lakes, oceans and other water bodies

**nonpoint source assessment** an evaluation of the state's waters on a watershed basis, consisting of the calculation of ordinal values for a number of NPS pollution related water quality impacting criteria, and resulting in (1) the nominal scaling of these criteria measures into three ranks, and (2) the creation of an overall NPS pollution water quality assignment similarly ranked

**NPDES-National Pollutant Discharge Elimination System** a national program in which pollution dischargers, such as factories and sewage treatment plants, are given permits to discharge. These permits contain limits on the pollutants they are allowed to

discharge

**outfall** place where effluent is discharged into receiving waters

**pH** term used to indicate the alkalinity or acidity of a substance, ranked on a scale from 1.0 (most acidic) to 14.0 (most basic), with 7.0 being neutral. Affects many chemical and biological processes in water— a range of pH 6.5-8.2 is optimal for most organisms

**phosphorus** an element found in fertilizers and sediment runoff which can contribute to the eutrophication of water bodies; it is the keystone pollutant in determining pollutant removal efficiencies for various BMPs as defined by the Virginia Stormwater Regulations

**plasticulture** agricultural production practice, usually used with fruits and vegetables, that covers a large portion of the field with plastic to heat up the soil and control weeds; land is graded so that stormwater is quickly drained to minimize excessive soil moisture levels

**point source (PS) pollution** discharges of treated or untreated effluent from industries, wastewater treatment plants and other sources that can be traced back to a single point of discharge. Some sources (leaching landfills, hazardous wastes, brownfields, materials storage, airport deicing, underground storage tanks, etc.) are subject to question, as to whether they fall into the point or nonpoint source category. In these situations, where NPDES permitting applies, the State of Virginia considers the issue a point source pollution problem, and the topic is not addressed in this nonpoint source pollution management plan.

**post-harvest site restoration** all road, deck and skid trail restoration activities, mechanical site preparation, prescribed burning to remove logging debris, and tree planting to facilitate reforestation of the logged site

**pretreatment** techniques employed in a stormwater management plan to provide storage or filtering to help trap coarse materials before they enter the stormwater BMP—required on some BMPs to avoid costly maintenance

**retention** permanent storage of stormwater

**retention basin** a stormwater management facility which includes a permanent impoundment, or normal pool of water, for the purpose of enhancing water quality and, therefore, is normally wet, even during non-rainfall periods—storm runoff inflows may be temporarily stored above this permanent impoundment for the purpose of reducing flooding, or stream channel erosion

**riparian** of or pertaining to the banks of a body of water

**riparian restoration** tree planting to restore forest buffers and associated habitat in areas immediately adjacent to streams, rivers and wetlands, to reduce pollution entering streams from these adjacent land uses

**rip-rap** broken rock, cobbles or boulders placed on earth surfaces, such as the face of a dam or the bank of a stream for the protection against erosive forces, such as flow velocity and waves

**runoff** the portion of precipitation, snow melt or irrigation water that runs off the land into surface waters  
*runoff pollution-see nonpoint source pollution*

**sediment** material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by water or wind; sediment piles up in reservoirs, rivers and harbors, destroying wildlife habitat and clouding water so that sunlight can not reach aquatic plants

**sedimentation (settling)** a pollutant removal method to treat stormwater runoff in which gravity is utilized to remove particulate pollutants; pollutants are removed from the stormwater as sediment settles or falls out of the water column (example of BMP utilizing sedimentation is a detention basin)

**septage** material accumulated in a pretreatment system or privy—the mat of grease and scum on the surface of septic tanks, the accumulated sludge at the bottom of tanks and the sewage present at the time of pumping

**sewage** water-carried and nonwater-carried human excrement, kitchen, laundry, shower, bath or lavatory wastes separately or together with such underground, surface, storm and other water and liquid industrial wastes as may be present from residences, buildings, vehicles, industrial establishments or other places.

**sewage disposal system** a sewerage system or treatment works designed not to result in a point source discharge

**sewer** any sanitary or combined sewer used to convey sewage or municipal or industrial wastes

**sewerage system** pipe lines or conduits, pumping stations and force mains and all other construction, devices and appliances appurtenant thereto, used for the collection and conveyance of sewage to a treatment works or point of ultimate disposal

**silviculture** forestry (development and care of forests) and the commercial farming of trees

**site** the parcel of land being developed, or a designated planning area in which a land development project is located

**soil test** chemical analysis of soil to determine the need for fertilizers or amendments for species of plant being grown

**state project** any land development project which is undertaken by any state agency, board, commission, authority or any branch of state government, including state supported institutions of higher learning

**storm sewer** a system of pipes, separate from sanitary sewers, that only carries runoff from buildings and land surfaces

**stormwater basin** a facility designed to impound stormwater runoff

**stormwater management facility** a device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release or the velocity of flow

**stormwater management plan** a document describing how existing runoff characteristics will be affected by a land development project and methods for complying with the requirements of the local program

**stream buffers (riparian buffers)** the zones of variable width which are located along both side of a stream and are designed to provide a protective natural area along a stream corridor

**subsurface soil absorption** a process that utilizes the soil to treat and dispose of effluent from a treatment works

**state waters** all waters on the surface or under the ground, wholly or partially within or bordering the Commonwealth of Virginia or within its jurisdictions

**total maximum daily load (TMDL)** the maximum amount of a pollutant that a water body can receive daily without violating water quality standards; includes best estimates of pollution from nonpoint sources, natural background sources, point sources, and a margin of safety; can also be defined as the strategy which is implemented to reduce or eliminate the impact of pollution

**total suspended solids (TSS)** total amount of particulate matter which is suspended in the water column

**treatment works** any device or system used in the storage, treatment, disposal or reclamation of sewage and industrial wastes, including but not limited to pumping, power and other equipment and appurtenances, septic tanks and any works, including land, that are or will be an integral part of the treatment process or used for ultimate disposal of residues or effluent resulting from such treatment

**tributary** a body of water that drains into another, usually larger, body of water

**tributary strategies** a state watershed initiative, Virginia's Tributary Strategy Program, which requires the development of strategies and written plans to restore water quality and living resources of the Chesapeake Bay and its tributaries

**turbidity** cloudiness of a liquid, caused by suspended solids; a measure of the suspended solids in a liquid

**ultra-urban** densely developed urban areas in which little pervious surface exists

**urban runoff** stormwater from city streets and adjacent domestic or commercial properties that carries nonpoint source pollutants of various kinds into the sewer systems and receiving waters

**Water Quality Improvement Act of 1997** a state watershed initiative which "establishes cooperative programs related to nutrient reduction and other point and nonpoint sources of pollution" to restore and improve the quality of state waters and to protect them from impairment and destruction for the benefit of current and future citizens

**Water Quality Improvement Fund** state funds allocated for the Agriculture Cost-Share Program and nonpoint source pollution prevention, reduction and control projects through an annual grants awards process

**water quality standards** state-adopted and EPA-approved ambient standards for water bodies; the standards prescribe the use of the water body and establish the water quality criteria that must be met to protect designated uses

**watershed** a drainage area or basin in which all land and water areas drain or flow toward a central collector such as a stream, river, or lake at a lower elevation

**water table** the uppermost surface of ground water saturation—the level in the saturated zone at which the pressure is equal to atmospheric pressure

**water well or well** any artificial opening or artificially altered natural opening, however made, by which ground water is sought or through which ground water flows under natural pressure or is intended to be artificially drawn; provided this definition shall not include wells drilled for exploration or production of gas or oil; building foundation investigation and construction; elevator shafts; grounding of electrical apparatus; or the modification or development of springs

**weir** a wall or plate placed in an open channel to regulate or measure the flow of water

